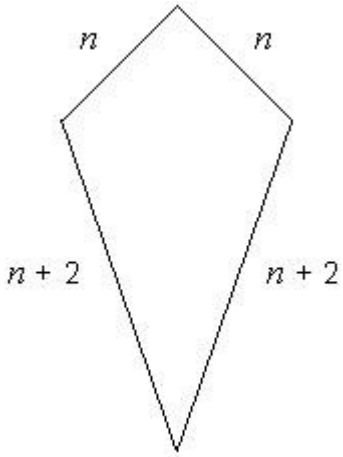
The diagram shows a kite.

The side lengths are in centimetres.



Not drawn accurately

(a) When $n = 9$, what is the perimeter of the kite?

..... cm

1 mark

(b) When the perimeter of the kite is **100cm**, what is the value of n?

n = ...

2 marks

(a) Perimeter of the kite is
$n+n+n+2+n+2$
So $P = 4n+4$ (collect like terms)
we know $n=9$, substitute into the formula
So $P = 4\times9+4$ or $P = 9+9+9+2+9+2$
$P = 36+4$ $P = 40cm$
$P = 40cm$

(b) Perimeter of the kite is 100cm
So $P = 100$
we know $P = 4n+4$
This gives $100 = 4n+4$
Now solve the equation
$100 = 4n+4$
(-4) $96 = 4n$ (-4)
$(\div4)$ $\frac{96}{4} = n$ $(\div4)$
$24 = n$

Your turn:

1a. When n=7, what is the perimeter of the kite?

1b. When the perimeter of the kite is 40cm, what is the value of n?

2a. When n=12, what is the perimeter of the kite?

2b. When the perimeter of the kite is 70cm, what is the value of n?

Answers:

1a. 32cm

1b. 9cm

2a. 52cm

2b. 16.5cm